

REMARKS

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. Claims 5, 6, and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,588,430 to Svenson (hereinafter "Svenson"). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claims 8 and 10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Claims 5, 7 and 9 are hereby amended. Reconsideration of the application based on the foregoing amendments and the following remarks is respectfully requested.

Specification Objections

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter.

Support for the hereby amended claim 7 limitation of "between 48 to 51 degrees," proper antecedent basis can be found on page 2, paragraph [0005], lines 1 to 4, for example, and for the hereby amended claim 9 limitation of "between 51 and 55 degrees" proper antecedent basis can be found on page 2, paragraph [0005], lines 1 to 6, for example.

Claims 7 and 9 are hereby amended to more particularly and distinctly claim the invention. In particular, by replacing the word "extends" with the word "is." Applicant respectfully submits that claims 7 and 9 are now clear that the extent (size) of the claimed large circle region" is "between 48 to 51 degrees" (for claim 7) or "between 51 to 55 degrees" (for claim 9). Applicants believe that the amendments to claim 7 and 9 overcome this objection, as these claims are now fully supported by the cited portions of the specification.

Withdrawal of the objection to the specification is respectfully requested.

35 U.S.C. §102 Rejections

Claims 5, 6 and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Svenson (U.S. Patent No. 2,588,430).

Svenson discloses a rotary blade pump having a rotor. “[T]he rotor 68 is provided with a plurality of generally radially disposed slots 106 spaced uniformly along the rotor periphery.” (Col. 4, lines 29 to 32). In Svenson, the small circle region is 20° and the rise zone is 50°, the large circle region is 20° and the fall zone is 50°. (Col. 5, lines 6 to 16)(emphasis added).

Claim 5 is hereby amended to recite “[a] pump comprising:

a double-stroke delivery contour, the delivery contour having at least one rise zone, at least one large circle region, at least one fall zone, and at least one small circle region, and,

a rotor within the delivery contour, the rotor having radially displaceable vanes in radial rotor slots,

an angular range of the large circle region of the delivery contour being lengthened, wherein the large circle region is greater than or equal to the fall zone.”

Svenson fails to teach or show “an angular range of the large circle region of the delivery contour being lengthened, wherein the large circle region is greater than or equal to the fall zone,” as required by claim 5. The fall zone region of Svenson is 50° and the large circle region of Svenson is 20°. (Col 5, lines 6 to 161). Therefore Svenson does not meet all of the limitations of claim 5 and cannot render claim 5 unpatentable as anticipated by Svenson.

Withdrawal of the rejections of independent claim 5 and claims 6 and 11 to 15, which are directly dependent on claim 5, under 35 U.S.C. §102(b) is respectfully requested.

35 U.S.C. §103 Rejections

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claim 7 is dependent on claim 5.

Svenson is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to dependent claim 7 is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Svenson to include “wherein the pump is a 10 vane pump and the large circle region of the delivery contour on one side is between 48 and 51 degrees” as recited in claim 7. The range established in claim 7 is not a workable range found by routine experimentation. The extension of the large circle range is critical to the invention. Svenson discloses a large circle having a value very different from that claimed. The claimed range is critical as it shortens the compression region from the prior art and lengthens the pressure equalization process. (Specification, page 2, paragraph [0005], lines 6 to 9).

For this additional reason, withdrawal of the rejection to claim 7 under 35 U.S.C. §103(a) is respectfully requested.

Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claim 9 is dependent on claim 5.

Svenson is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to dependent claim 9 is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Svenson to include “wherein the pump is a 12 vane pump and the large circle region of the delivery contour on one side is between 51 and 55 degrees” as recited in claim 9. The range established in claim 9 is not a workable range found by routine experimentation. The extension of the large circle range is critical to the invention. Svenson discloses a large circle region having a value very different than that claimed. The claimed range is critical as it shortens the compression region from prior art and lengthens the pressure equalization process. (Specification, page 2, paragraph [0005], lines 6 to 9).

For this additional reason, withdrawal of the rejection to claim 9 under 35 U.S.C. §103(a) is respectfully requested.

Allowable Subject Matter

Claims 8 and 10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

In light of the discussion above with respect to claims 5, 7 and 9, withdrawal of the objections to claims 8 and 10 is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

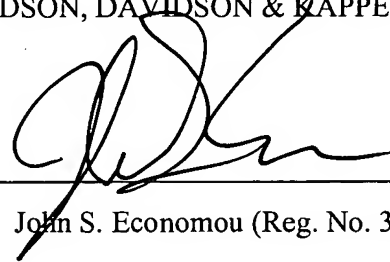
If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,

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By: _____



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